

# UK Patent Application

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## (54) Fastening means

(57) Fastening means particularly for securing together two parts 14, 15 of knock down furniture comprises a first pair of members in the form of a keyhole slot 22 and a headed peg which are engageable by a combination of first a movement of the members towards one another and then a relative translational movement and a second pair of members in the form of an aperture 23 and a peg 2 which under the action of biasing means 26 engage together after such relative translational movement to prevent return translational movement until manually released.

As shown, the biasing means is a springy steel strip 26 mounting the headed peg and the peg 24.

Fig.1.

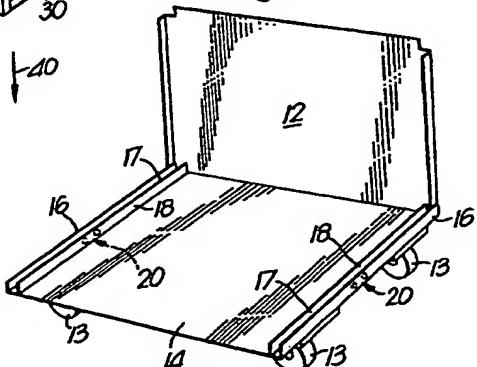
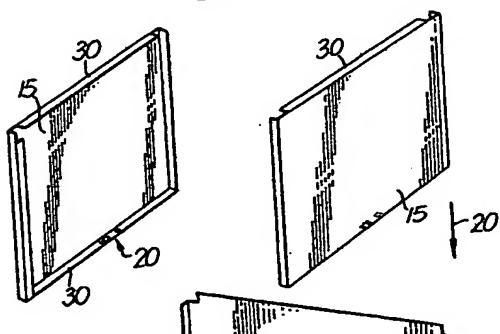
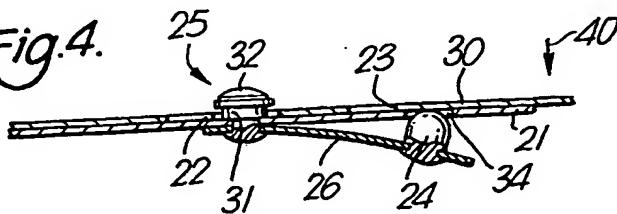


Fig.4.

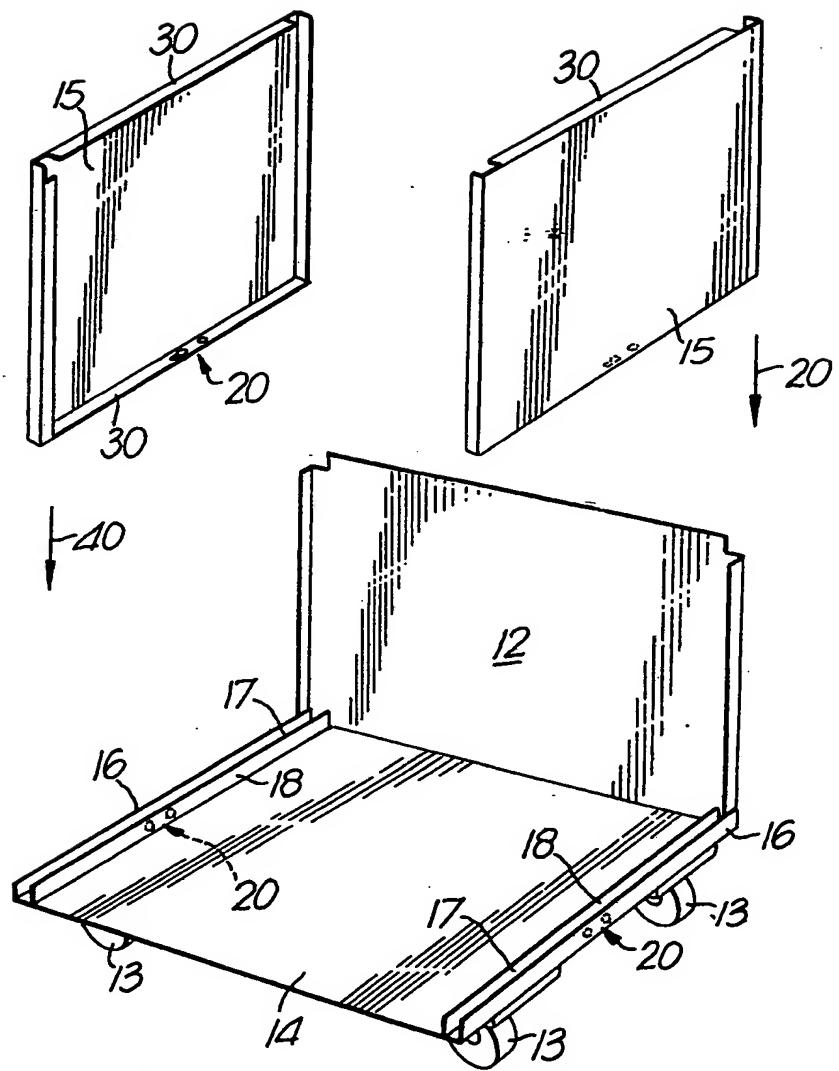


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.  
The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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Fig. 1.



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Fig. 2.

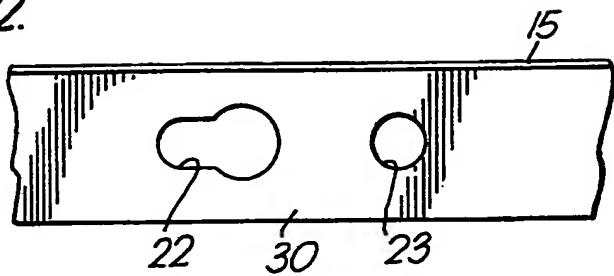


Fig. 3.

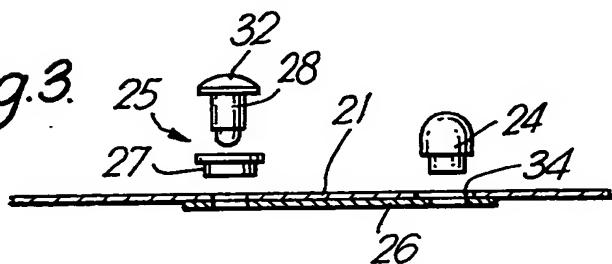


Fig. 4.

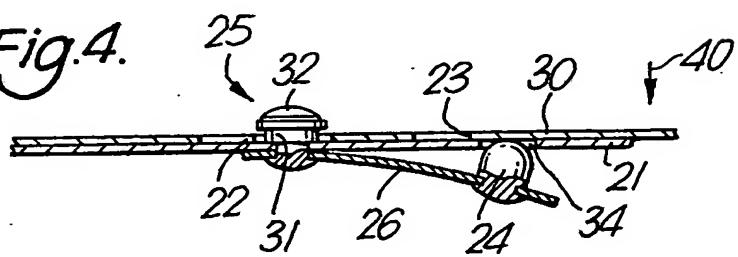
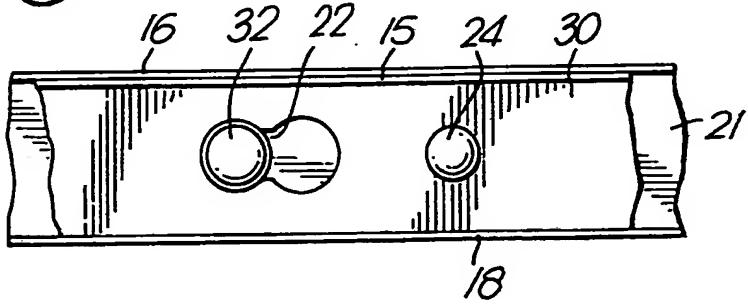


Fig. 5.



FASTENING MEANS

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This invention relates to a fastening device, particularly for securing together two parts of a knockdown quick assembly piece of furniture.

In the Specification of our European Patent Application Published No: 0245978 we have described a knockdown cabinet having a base, sides and a top which are assembled together simply by pushing the sides into channels formed along the side edges of the base and top. The sides are a close location fit in the channels and no further fastening means are required. For some applications, so that the cabinet can more easily be moved around once assembled, additional fastening means are required to hold the sides to the base and possibly also to the top.

One object of the present invention is to provide an easily releasable fastening device suitable for such a purpose and which preferably will be fixed to the furniture parts as they will be sold in knockdown form so that the assembler does not need to then assemble further separate fasteners such as screws or bolts and needs no tools.

In one aspect, the invention provides fastening means comprising a first pair of members which are engageable by a combination of first a movement of the parts towards one another and then a relative translational movement and a second pair of members which, under the action of biasing means, engage together after such relative translational movement to prevent return translational movement until manually released.

Preferably the first pair of members are a keyhole slot and headed peg and the second pair of members are a spring loaded detent and an aperture.

In one preferred form, the fastening means comprise two parts, a first of the parts defining a keyhole slot and a spaced aperture, and a second of the parts including a strip of springy material carrying a first upstanding peg dimensioned to be located in the aperture and a second spaced peg having a body with an enlarged head, the head being

dimensioned to fit through the keyhole end of the keyhole slot but not through the slot portion of the keyhole slot in which the body is movable. To assemble, the parts are moved together to pass the head through the keyhole portion of the keyhole slot and then moved with relative translational movement to bring the walls defining the slot portion of the keyhole slot under the head (this retains the parts against relative movement away from one another); the movement of said parts together serves to depress the first peg by bending the spring strip which acts as biasing means to urge the peg into the aperture when they are aligned following the translational movement. The engagement of the peg in the aperture then serves to prevent return relative sliding movement until the peg is manually depressed against the biasing action of the strip.

Such a fastening means is cheap and simple and can be attached to the parts as sold in knockdown form so it does not require the assembler to use any tools or fix in separate fastenings such as screws or bolts.

The invention extends to furniture parts which are designed to push fit together, such as those for forming the cabinet described in EP Specification 0245978, including such a fastening means.

One embodiment of fastening means, in accordance with the invention, will now be described, by way of example only, with reference to the accompanying drawings of which:

Figure 1 is a perspective view of the base, back and two sides of a cabinet showing how the sides will be connected to the base substantially in accordance with the description of the above mentioned European Application.

Figures 2 to 5 show fastening means attached to portions of such sides and base on an enlarged scale. In these figures,

Figure 2 is a plan view of the base edge of a side panel

Figure 3 is a sectional view of parts of the

fastening means before assembly,

Figure 4 is a sectional view of the cabinet parts being assembled and fastened together, and

Figure 5 is a plan view of the cabinet parts and fastening means as fastened together

The parts of the knockdown cabinet shown in Figure 1 include a back 12, a base 14 on wheels 13 and two sides 15. The base 14 has upwardly turned side edges 16 forming the outside walls of upwardly opening channels 17 extending along each side of the base, the inner walls 18 being formed by strips welded to the base. The front edge of the base is flat (or may be turned down) leaving the fronts of the channels open. The sides 15 each have inwardly turned top and bottom edges 30 which are a close location push fit in the channels 17.

Fastening means 20 are provided to co-operate between the bottom edges 30 of the sides and the bases 21 of the channels 17 to fasten the sides securely in the channels in addition to the push fit location. Each fastening means comprises a keyhole slot 22 and a separate spaced aperture 23 formed in the turned over bottom edge 30 of a side and a pair of pegs 24, 25 mounted on a strip 26 of springy steel, acting as a leaf spring, fastened to the base 21 of a channel.

A peg 24 comprises a hollow shouldered spacer 27 and a rivet 28, the rivet being inserted through the channel in the spacer and aligned holes in the base 21 and strip 26 and peened over so that the peg and strip are firmly fixed to the base and the peg has an upstanding body 31 with an enlarged head 32. The peg 25 is inserted through aligned holes in the base 21 and strip 26 and peened over to secure it to the strip while leaving it free to move through the larger hole 34 in the base 21.

To assemble and fasten a side 15 in a channel 17, the base of the side 15 is pushed into the channel from above in the direction of arrow 40 with the front edge of the side just extending outside the front edge of the channel and so

that the keyhole portion of the keyhole slot receives the head 32 of the peg 24. The engagement of the base of the turned over edge 30 with the peg 24 depresses this peg against the action of the leaf spring 26 as seen in Figure 4. The side 15 is then pushed along the channel 17 towards the back 12 with the body 31 of peg 24 sliding along the slot portion of the keyhole slot until the peg 24 engages in the aperture 23. The head 32 then prevents the side being pulled out of the channel until the peg 25 is manually depressed and the side slid forwards until the head is again opposite the keyhole portion of the slot when the side can be pulled out of the channel.

The cabinet will preferably have a top formed along its sides with downwardly opening channels 17 in which the upper edges 30 of the sides 15 are a close location fit and these members may be provided with similar fastening means.

**CLAIMS**

1. Fastening means for securing together two parts comprising a first pair of members which are engageable by a combination of first a movement of the members towards one another and then a relative translational movement and a second pair of members which under the action of biasing means engage together after such relative translational movement to prevent return translational movement until manually released.
2. Fastening means according to Claim 1 in which the first pair of members are a keyhole slot and headed peg and the second pair of members are a spring loaded detent and an aperture.
3. Fastening means according to Claim 2 in which the detent is mounted on a springy strip which provides the spring loading.
4. Fastening means according to claim 2 or claim 3 formed in two pieces, a first of the pieces defining a keyhole slot and an aperture the enlarged portion of the keyhole slot being spaced a distance from the aperture, and a second of the pieces including a strip of springy material carrying a first upstanding peg dimensioned to be located in the aperture and a second peg spaced from the first peg by substantially said distance and having a body with an enlarged head, the head being dimensioned to fit through the keyhole end of the keyhole slot but not through the slot portion of the keyhole slot, but the body being slid able in the slot.
5. Fastening means substantially as described herein with reference to or as illustrated in the accompanying drawings.
6. Furniture parts carrying fastening means according to any of Claims 1 to 5 by means of which the parts can be releasably fastened together.
6. A knockdown cabinet according to European Patent 0245978 in which at least two inter-engagable parts include

**fastening means according to any of Claims 1 to 5.**

Amendments to the claims have been filed as follows

**CLAIMS**

1. Fastening means for releasably securing together first and second parts comprising a first substantially planar member defining a slot having a relatively wide portion and a relatively narrow portion and defining an aperture, a second member comprising a stud having a head and a body the head being dimensioned to pass through said wide portion but not through the narrow portion of the aperture and the body being dimensioned to be movable from the wide portion along the narrow portion, and a peg dimensioned to be received in the aperture, a strip of springy material on which the peg is mounted and effectively connected to the stud, whereby the peg can move away from the plane of the first member, the arrangement being such that when the head is inserted through the wide portion of the slot, the peg is displaced rearwardly by contact with the first member so as to bend the strip, and when the stud is displaced transversely with the body traversing the narrow portion of the slot the peg will enter the aperture under the bias of the strip to prevent reverse transverse movement until the peg is depressed.
2. Knockdown quick assembly furniture having a plurality of parts adapted to be assembled by being pushed together, at least two of which parts are formed as or carry respectively the fastening members according to Claim 1.
3. Furniture according to Claim 2 in which the slot and aperture are formed directly in a furniture part.
4. Furniture according to Claim 2 or Claim 3 in which the peg is riveted to the strip with the rivet forming part of the peg.
5. Furniture according to any of Claims 2 to 4 in which the strip is riveted to the furniture part, the rivet itself forming part of the stud.
6. Furniture according to any of Claims 2 to 5 comprising a cabinet having a base mounted on wheels and in which the stud and peg are carried by the base and the slot

and aperture are formed in the bottom surface of a side.

7. Furniture according to any of Claims 2 to 6 made from sheet metal material.